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ABSTRACT

The report summarizes information about the history, technology and operation of educational television (ETV) in the U.S. The history of educational broadcasting is outlined from 1941 when the Federal Communications Commission (FCC) approved applications for five noncommercial FM radio channels, to 1967 and the passing of the Public Broadcasting Act. The report describes regulations covering ETV and points out that educational stations concerned mostly with classroom instruction can use a reserved portion of the broadcasting spectrum from 2500 to 2590 MegaHertz. Non-technological language is used to describe how microwave relay, TV translators, and cable television (CATV) are used in instructional systems. The report describes both private and government sources of funds for supporting ETV, and outlines the procedure to get FCC approval for an ETV station. Various sources of educational programs are listed, as well as private and government organizations which provide other kinds of help to ETV broadcasters. (MG)

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WASHINGTON, D. C. 20554

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INF BULLETIN NO. 16-B

April 1968

EDUCATIONAL TELEVISION

Television has become an integral part of quality education, cultural enrichment and information. It has brought into the classroom instructors, demonstrations and visual and aural materials that have greatly increased the value of students' learning experiences. It has brought into the home cultural events, public affairs presentations and a variety of other programs heretofore available only to those relatively few who had the means and the opportunities to seek them out in areas where they were available.

The first noncommercial educational television station went on the air in May, 1953. Fifteen years later more than 150 ETV stations reached a population area of about 160 million persons, and it was estimated that some fifteen million students in more than two thousand educational institutions, including elementary, secondary and higher education, were receiving all or part of their instruction through television. In addition, more than 145 applications had been filed with the Federal Communications Commission for over 400 channels in the Instructional Television Fixed Service (2500 megahertz band) since that service was established in 1963. Some 2000 closed-circuit television systems were serving public and private education, industry and various service agencies.

The passage of the Public Broadcasting Act of 1967 indicated even more dramatic growth and contributions of educational television to the public interest for the future. The emergence of the term "public broadcasting" suggests that the definition of ETV may be made clearer by referring to "public television" as a cultural-public affairs service and to "instructional television" as an academic-informational area.

Inasmuch as the Federal Communications Commission does not license or regulate wired closed-circuit instructional systems, this bulletin will be devoted to educational broadcast stations, translators, microwave systems, and the Instructional Television Fixed Service.

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HISTORY

Educational broadcasting has played an important role in Federal Communications Commission actions since the beginning of public broadcasting. Educational institutions were among the pioneers in experimental aural broadcast which led to the establishment of regular AM broadcasting following World War I. In 1941 the Commission allocated five channels for noncommercial FM broadcasting, increasing the number to twenty in 1945. In April, 1968, more than 345 educational FM stations, and 20 educational AM radio stations were on the air.

In 1949 the FCC invited comments on the advisability of providing channels for noncommercial educational television operation, and on March 22, 1951, as part of a general review of television, the Commission proposed such a course. On April 14, 1952, after extensive proceedings, the Commission opened UHF channels for the expanding TV needs and concomitantly reserved 242 channel assignments (80 UHF and 162 VHF) for noncommercial educational use. These reservations constituted about 12% of the total allocations at that time. The Commission stated:

> "We conclude that the record shows the desire and ability of education to make a substantial contribution to the use of television. There is much evidence in the record concerning the activities of educational organizations in AM and FM broadcasting. It is true and was to be expected that education has not utilized these media to the full extent that commercial broadcasters have, in terms of number of stations and number of hours of operation. However, it has also been shown that many of the educational institutions which are engaged in aural broadcasting are doing an outstanding job in the presentation of high quality programming, and have been getting excellent public response.
>
> "And most important in this connection, it is agreed that the potential of television for education is much greater and more readily apparent than that of aural broadcasting, and that the interest of the educational community in the field is much greater than it was in aural broadcasting . . . The public interest will clearly be served if these stations are used to contribute significantly to the educational process of the nation. The type of programs which have been broadcast by educational organizations, and those which the record indicates can and would be televised by educators, will provide a valuable complement to commercial programming."

The first ETV station to go on the air was KUHT, University of Houston, Texas, on May 23, 1953.

The table of channel allocations, including noncommercial educational reservations, has been revised several times since it was first issued in 1952. The most recent revision, issued in June, 1965 and corrected in March, 1966, provided for 116 VHF and 516 UHF ETV reservations, an increase of more than two-thirds over the previous total of reservations. This table was derived from a computer program, which selected the reservations on an efficiency basis. Deliberately a non-saturated table, this allocations plan was designed for educational organizations to develop a greater number of stations by permitting future computer selection and assignment of unallocated channels to places where at this time ETV may be completely unanticipated.

The steady growth of ETV is illustrated in the following table of stations on the air at the end of each calendar year:

Year	Number
1953	1
1954	10
1955	17
1956	21
1957	27
1958	35
1959	44
1960	51
1961	62
1962	75
1963	83
1964	99
1965	113
1966	125
1967	151
March, 1968	160

A recent fast-growing supplemental service is the Instructional Television Fixed Stations (ITFS), frequently referred to as the 2500 megahertz service. On July 25, 1963 the Commission established the ITFS for the transmission of instructional and cultural materials to schools and other selected receiving locations, following an experiment in the 2000 megacycle (1990-2110) band in the Plainedge, Long Island school district. The Plainview-Old Bethpage Schools, Long Island, was the first to go on the air, on March 2, 1964. In April, 1968, about 50 systems with almost 100 channels were on the air, and more than 55 construction permits for over 200 channels were outstanding.

The Commission also licenses translators and boosters for the relaying of ETV broadcasting, and has jurisdiction over microwaving of ETV signals.

In early 1967, after almost two years of study of the technical, organizational, financial and programming considerations of ETV, the Carnegie Commission on Educational Television published its report, Public Television: A Program for Action. Its recommendations for ETV's future support and development were the bases for the initiation of the Public Broadcasting Act of 1967. This Act provides the

means for the necessary increased growth of noncommercial television and radio in the public interest. Title I of the Act extends the matching grant concept of the ETV Facilities Act of 1962; it provides for the inclusion of educational radio for the first time, for the Federal share of costs to be as high as 75%, and for liberalized use of funds for interconnection. Title II of the Act established a Corporation for Public Broadcasting; the CPB is authorized to support the production of program materials for noncommercial television and radio stations, station operation, interconnection of stations, research and training in educational broadcasting, and to serve film and tape library and clearing house functions. Title III of the Act provides for a study of instructional media use and a subsequent report and recommendation to Congress.

ETV BROADCAST STATIONS

About one-third of the ETV broadcast stations are licensed to state or local education systems, about one-third to colleges or universities, and about one-third to community organizations. At first virtually all of the ETV stations were VHF; since 1960 some two-thirds of the CP grants and applications have been in the UHF spectrum, and in late 1967 the number of UHF stations on the air exceeded the number of VHF for the first time. All-channel receiver legislation passed by Congress authorized the FCC to require that all TV sets sold after April 30, 1964 be capable of receiving UHF as well as VHF signals. With the number of VHF unused reservations continually diminishing, the continued growth of UHF ETV stations seems likely. Technological advances, particularly in the use of solid-state devices, have resulted in markedly improved UHF television receivers, thus diminishing the disparity between VHF and UHF coverage.

ETV station programming varies considerably, from in-school instructional materials to performing arts programs for the home viewing audience. Materials are obtained from many sources, including individual stations, private producing organizations, National Educational Television, the National Association of Educational Broadcasters, and Instructional Television Libraries located in Bloomington, Indiana, Boston, Massachusetts, and Lincoln, Nebraska. Local in-school programs, ideally, are locally produced and may be entire series, individual lessons, or part of a lesson such as a demonstration. Reinforcement materials, such as civic tours, visits to cultural sites, and interviews with prominent persons are frequently included. Cultural programming is broad in scope, and includes public affairs programs, many of a probing and controversial nature, interviews with persons in all areas of life, analysis as well as presentations of the performing and plastic arts, and programs for special groups such as children, or on special subjects. Educational television does not usually compete with commercial television insofar as it does not attempt to reach a mass audience with materials representing a common denominator, but tries to reach a large spectrum of minority viewing groups with special interest programs, and a large general audience with common interest programs not available on commercial television. In the spring of 1968 many educational television stations were producing and planning special series and programs to meet the needs of the inner-cities.

In 1967, when National Educational Television began to provide color programming, a number of ETV stations had color transmission capability. By early 1968 most of the remaining stations not already in color had plans for such capability.

The Federal Communications Commission Rules and Regulations has a special section devoted to noncommercial educational stations. Part 73, paragraph 621, reads:

> "In addition to the other provisions of this subpart, the following shall be applicable to noncommercial educational television broadcast stations:
>
> "(a) Except as provided in paragraph (b) of this section, noncommercial educational broadcast stations will be licensed only to nonprofit educational organizations upon a showing that the proposed stations will be used primarily to serve the educational needs of the community; for the advancement of educational programs; and to furnish a nonprofit and noncommercial television broadcast service.
>
> "(1) In determining the eligibility of publicly supported educational organizations, the accreditation of their respective state departments of education shall be taken into consideration.
>
> "(2) In determining the eligibility of privately controlled educational organizations, the accreditation of state departments of education or recognized regional and national educational accrediting organizations shall be taken into consideration.
>
> "(b) Where a municipality or other political subdivision has no independently constituted educational organization such as, for example, a board of education having autonomy with respect to carrying out the municipality's educational program, such municipality shall be eligible for a noncommercial educational television broadcast station. In such circumstances, a full and detailed showing must be made that a grant of the application will be consistent with the intent and purpose of the Commission's Rules relating to such stations.
>
> "(c) Noncommercial educational television broadcast stations may transmit educational, cultural and entertainment programs, and programs designed for use by schools and school systems in connection with regular school courses, as well as routine and administrative material pertaining thereto.

"(d) An educational station may not broadcast programs for which a consideration is received, except programs produced by or at the expense of or furnished by others than the licensee for which no other consideration than the furnishing of the program is received by the licensee. The payment of line charges by another station or network shall not be considered as being prohibited by this paragraph.

"(e) To the extent applicable to programs broadcast by a noncommercial educational station produced by or at the expense of or furnished by others than the licensee of said station, the provisions of §73.654 relating to announcements regarding sponsored programs shall be applicable, except that no announcements (visual or aural) promoting the sale of a product or service shall be transmitted in connection with any program: Provided, however, That where a sponsor's name or product appears on the visual image during the course of a simultaneous or rebroadcast program either on the backdrop or in similar form, the portions of the program showing such information need not be deleted."

INSTRUCTIONAL TELEVISION FIXED SERVICE

The Instructional Television Fixed Service (ITFS) provides 31 channels in the 2500-2690 megahertz (MHz) band. It is designed primarily for classroom instruction (and may additionally be used for the transmission of other special materials to groups or individuals) to selected receiving sites. ITFS relieves the pressure for broadcast ETV allocations and instructional broadcast time on stations when the sole need is for the transmitting of instructional materials over a limited area. Up to four channels may be used by a single licensee so that four different programs may be transmitted and four different classes instructed simultaneously, thus tending to alleviate the scheduling program in the use of TV at many institutions.

ITFS channels are 6 mc/s band width and are organized in seven groups of four and an eighth group of three. ITFS transmitting equipment operates with very low power, with a useful service range of about 20 miles, and is relatively lower in cost than television broadcast equipment. However, while the 2500 MHz signal is transmitted openly, the cost of a special receiving antenna and converter remove the system, for practical purposes, from home use. Special receiving devices convert the signals to regular TV channels so that programs may be seen on conventional TV receivers.

Because technical considerations and operations differ from that of standard VHF and UHF broadcasting, detailed rules and regulations governing ITFS operations have been established. Among the most pertinent considerations are the following: requirements for eligibility to be a licensee of an ITFS station are the same as those for a noncommercial educational television station; transmitter engineers must be technically qualified, but routine operations may be performed by third-

class radiotelephone permit holders; remote control and unattended operation of some equipment are provided for; permission to utilize the signal must be obtained by the potential user from the transmitting licensee.

On February 8, 1965, the Commission held a national meeting of those persons in education and industry interested in the development of ITFS, principally to determine ways to meet increasing demands for channels in metropolitan areas. Subsequently, the Commission established, on October 6, 1965, a national Committee for the Full Development of the Instructional Television Fixed Service to operate on national, regional, state and local levels. By early 1968 some 1000 educators on all learning levels, representing varied institutional controls, and from all geographical areas of the country, were participating in ITFS Committees, principally working with local subcommittees to pre-plan maximum efficient use of channels for all potential users in any given area. ITFS applications received by the FCC are sent to appropriate subcommittees for their recommendations.

A booklet, "ITFS: What It Is . . . How To Plan" was developed by the FCC's Committee for the Full Development of the ITFS, and was published for the Committee in 1967 by the National Education Association. It can be ordered from the N.E.A., 1201 Sixteenth Street, N.W., Washington, D.C. 20036.

MICROWAVE, TRANSLATORS, CATV

Microwave relay systems utilize narrow, concentrated beams for efficient short range transmission. Educational TV stations may use microwave equipment to provide program circuits between the studio and transmitter (TV-STL), to relay programs between TV broadcast stations (TV Intercity Relay), and to pick up programs that occur outside regular studios (TV Pickup). The rules governing such TV auxiliaries are contained in Part 74, Subpart F of the FCC Rules, "Television Auxiliary Broadcast Stations." TV program relay facilities for use by closed-circuit TV systems may be authorized on certain microwave channels in the Business Radio Service under Part 91, Section 91.554 of the Rules. Such stations may also be used in connection with ITFS systems. ITFS stations may be used, as well as Studio-Transmitter program circuits, for relaying programs between ITFS systems in adjacent areas, for delivering ITFS programs to TV broadcast stations, and for relaying TV broadcast programs to ITFS systems.

TV translators are devices which change the frequency of an incoming TV broadcast signal and retransmit it on a different TV broadcast channel. They may be used to serve areas not served by the primary broadcast ETV station or ITFS system. No significant changes are made in the technical characteristics of the signal other than frequency and amplitude. Many school districts construct and operate translators, and many stations operate their own translators in order to boost their signals into outlying areas for both school and community programming. TV translators may not operate as independent broadcast stations.

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CATV (Community Antenna Television) systems pick up TV signals and place them on cables to homes or public buildings in a given community which, for reasons of terrain or otherwise, would not be able to pick up that particular signal with as much clarity, if at all. A number of ETV stations are carried by CATV, and many educational institutions utilize this service. Under current rules (Part 74, Subpart K, "Community Antenna TV Systems"), CATV systems are obliged upon request to carry the signal of an ETV station within whose Grade B or higher priority contour the system operates and, with certain exceptions, to afford same day program exclusivity to such stations as against the programs of lower priority stations.

FINANCING

Different types of ownership mean different types of budgets and sources of funds. On the average, stations operated by colleges and universities and by school systems obtain about 75% of their income from direct budgeted support. Stations operated by state agencies receive about 95% of their funds from state appropriations. Community stations, on the other hand, receive about 75% of their support from gifts, grants, and services, the latter primarily for the production of in-school programs. ITFS systems are supported by the local instutitional licensee, in some instances with the aid of Federal grants.

As early as 1952 the FCC recognized the incipient financial difficulties confronting ETV when it stated:

> "It will admittedly be a difficult and time consuming process in most instances, but the likelihood of ultimate success, and the importance to the public of the objective sought, warrants the action taken . . . Television is clearly a fertile field for endowment, and it seems probable that sufficient funds can be raised both through this method and through the usual sources of funds for public and private education to enable the construction and operation of many noncommercial educational stations. As concerns the costs of operation, there is the possibility of cooperative programming and financing among several educational organizations in large communities."

Public and Private financing have greatly assisted ETV. The Ford Foundation's Fund for the Advancement of Education has been one of ETV's principal supporters. Currently the Ford Foundation is providing funds for National Educational Televisdon

and for educational television and radio stations, and the Carnegie Corporation, among others, is assisting public television study and development.

The Carnegie Commission report of January, 1967, Public Television, showed that of the total source of funds for all ETV stations, 27.1% came from state government, 18.9% from local government, 14.4% from foundations, 11.8 percent from the federal government, 11.2% from state universities, 5.5% from subscribers, 3.5% from business and industry, 1.9% from underwriting, and 5.7% from other sources. Of total operating costs of all stations, 37.9% went for program expenses, 31.2% for general and administrative, and 30.9% for technical. The median station operating expense was $258,510. Selected items showed 52.9% of total station expenses went for wages and salaries, 6.1% for fund raising and promotion, and 2.7% for outside programs.

The Public Broadcasting Act of 1967, Title I, is an extension and enlargement of the Educational Television Facilities Act of 1962, which provided matching Federal grants of up to one million dollars per state for the construction and expansion of ETV facilities, to a total of $32 million until its expiration in 1967. The 1967 Act has an authorization of $38 million for three years beginning fiscal year 1967 (subject to appropriation). The federal share is increased to a maximum of 75% with no limit on interconnection. An individual state is limited to 8½% of each annual appropriation. Title I of this Act--Public Law 90-129--is administered through the Department of Health, Education, and Welfare.

The Corporation for Public Broadcasting, Title II of the 1967 Act, is not an agency or establishment of the United States government. Its function is to provide funds for various purposes, including programming, interconnection, operational costs, research, demonstration, training and public information.

Other government legislation helpful to both broadcast ETV and ITFS includes the Elementary and Secondary Education Act of 1965, especially Title I, assistance for educationally deprived children, Title II, providing printed and audio-visual materials, and Title III, supplementary educational centers and services; the Higher Education Act of 1965, especially Title VI, the acquisition of closed-circuit instructional television equipment, materials and minor remodelling of TV facilities; the National Defense Education Act of 1958, especially Title III, strenghtening instruction in science, mathematics, modern foreign languages and other critical subjects, and Title VII, research and experimentation in television, radio, motion pictures and related media. Other significant support may come from the Vocational Education Act of 1963; the Appalachian Regional Development Act of 1965, especially Title I, Special Appalachian Programs; the Economic Opportunity Act of 1964,

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particularly Title I, Youth Programs, and Title II, urban and rural community action programs; the State Technical Service Act of 1965; and from the Public Health Service for research, demonstration and programming, particularly from the National Institutes of Health, the National Institute of Mental Health, and the Division of Nursing of the Bureau of Health Manpower.

APPLICATION PROCEDURES

The Commission's Table of Assignments, Section 73.606 of the Rules and Regulations, contains the educational reservation status and frequencies of TV broadcast channels allocated to a given city. An educational organization or institution may apply for a reserved or nonreserved channel. Funds available through Title I of the Public Broadcasting Act of 1967, however, are allocated to permittees or licensees on reserved channels only, unless the Construction Permit had been obtained prior to May 1, 1962.

If there is no reserved channel in a given community, a qualified group may petition for reservation of an unused assigned channel, for the "drop-in" assignment of a channel, or for the reallocation of a channel from another city. The petition must clearly delineate the purpose of the proposal and show why it would be in the public interest. If the Commission determines the proposal warrants consideration, it will institute rule-making proceedings, and if the assignment is subsequently made, an application may then be made to activate the channel.

Virtually all prospective applicants obtain legal and engineering counsel to assist in supplying required and accurate information to the Commission. Expeditious processing frequently is dependent upon the good order of the application and the completeness, specificity and preciseness of the information.

Applicants for new broadcast stations, license renewals, or major changes in existing facilities, must give local public notice of intent, through a local station (if any) and/or in a local newspaper, as specified in Section 71.580 of the Rules and Regulations.

All broadcast applications must be submitted in triplicate to the Secretary, Federal Communications Commission, Washington, D. C. 20554. After they are tendered, if complete and in conformity with the rules, they are formally accepted for filing and assigned a file number. An application is not acted upon until at least 30 days following acceptance, during which period it is subject to objecting petitions. Processing of applications involve three major areas of examination and review: Engineering, Financial and Legal. The engineering

examination verifies calculations to determine if they conform to the technical requirements of the Commission's rules. The Antenna Survey Branch determines whether the proposed antenna structure meets Federal Aviation Agency regulations. An accountant checks the financial qualifications, including adequacy of resources and matters such as discrepencies between estimated and potential actual operating costs, and total costs balanced against particular costs. The financial examination is particularly concerned with verification of the source of funds: whether the applicant has the necessary funds, available or committed, to construct and operate the station for one year, including Educational Television Facilities Act grants if applied for, or has been given the authority to use the money, bonds, securities or other finances described in the application. Attorneys determine whether the applicant is qualified under the Communications Act to become a licensee. They review technical and economic findings, check the corporate structure, determine if there are any matters before the Commission which might affect the applicant, and analyze the Statement of Program Service.

When an application for a new station or for changes in an existing facility is approved, a Construction Permit (CP) is issued. The permittee has 60 days in which to begin construction, and a period of six months thereafter for completion of the project. If the station cannot be constructed in the specified time an extension may be applied for. Following issuance of the CP the permittee may request call letters, with the first available preference assigned. Within 30 days from the time the CP is issued the permittee must submit an Ownership Report. This report also must be filed with each application for a license renewal, and within 30 days of a change of officer or ownership of the station.

When construction of the facility is complete in accordance with the CP, the permittee may conduct equipment tests, following notification to the Commission. Application for the license may be submitted, accompanied by measurements of equipment performance. At the same time--but at least ten days before regular programming is scheduled to begin--Program Test Authority (PTA) may be requested. PTA is contingent upon approval by the FCC of performance data as detailed in the license application. In effect, PTA entitles the permittee to begin regular station operation and programming, although the license itself is not granted until the license application receives final approval. Renewal dates vary by geographical region; a new licensee must file his first renewal at the first date specified for his state; thereafter licenses are normally issued for three year periods.

Channels for ITFS stations are selected on a case-by-case basis. There is no pre-planned assignment table in the rules, although community pre-planning is desirable. The booklet mentioned on page 7 of this bulletin offers valuable suggestions in applying for ITFS systems.

Education television applications, requests and reports are submitted on the following forms:

FCC Form 340: Application for Authority to Construct or Make Changes in a Non-commercial Educational TV, FM, or Standard Broadcast Station.

FCC Form 341: Application for Noncommercial Educational TV, FM, or Standard Broadcast Station License.

FCC Form 342: Application for Renewal of Noncommercial Educational TV, FM, or Standard Broadcast Station License.

FCC Form 330P: Application for Authority to Construct or Make Changes in an Instructional Television Fixed Station.

FCC Form 330L: Application for Instructional Television Fixed Station License.

FCC Form 343: Application for Authority to Construct or Make Changes in a Television Broadcast Booster Station.

FCC Form 344: Application for Television Broadcast Booster Station License.

FCC Form 345: Application for Renewal of Television Broadcast Booster Station License.

FCC Form 346: Application for Authority to Construct or Make Changes in a Television Broadcast Translator Station.

FCC Form 347: Application for Television Broadcast Translator Station License.

FCC Form 348: Application for Renewal of Television Broadcast Translator Station License.

FCC Form 313: Application for Authorization in the Auxiliary Broadcast Services.

FCC Form 318: Request for Subsidiary Communications Authorizations.

FCC Form 701: Application for Additional Time to Construct Radio Station.

FCC Form 321: Application for Construction Permit to Replace Expired Permit.

FCC Form 323E: Ownership Report for Noncommercial Educational TV, FM, or Standard Broadcast Station.

NETWORKS AND PROGRAMS

At the beginning of 1968, no full-time live nationwide ETV network existed, although National Educational Television (NET) had on numerous occasions interconnected ETV stations nationally for special programs. The Public Broadcasting Laboratory of NET, funded by the Ford Foundation for a two year period, began broadcasting on a national ETV hookup on November 5, 1967 a Sunday evening experimental series of cultural, informational and public affairs programs. In early 1968 NET had well-advanced plans for full-time interconnection.

NET has become known as the "fourth network," supplementing and offering an alternative service to the three commercial networks. NET provides taped programs to more than 133 affiliated ETV stations. Funded primarily by the Ford Foundation, NET offers its affiliates five hours per week of original programs, one and one-quarter hour per week of new children's programs, and access to a large library of programs for re-run. The bulk of the programs are produced by the NET staff; in addition, with NET supervision, programs are produced by affiliated stations and by independent producers.

The National Association of Educational Broadcasters (NAEB) established in late 1965 a program service to its members under its Educational Television Stations Division. Several hours a week of programs are made available from ETV stations and other sources. These are distributed through a tape network arrangement from the ETS Program Service, 317 East Second Street, Bloomington, Indiana 47401.

Instructional materials are distributed on a national basis by the Great Plains National Instructional Television Library, Lincoln, Nebraska, by the National Center for School and College Television, Bloomington, Indiana and by the Midwest Program for Airborne Televised Instruction, Lafayette, Indiana (see pages 15-16).

At the beginning of 1968 the Eastern Educational Network (EEN) was the only physically interconnected ETV regional network. The EEN provides in-school and evening taped programs to 23 stations and simultaneous evening interconnection for

17 stations in Maine, Vermont, New Hampshire, Massachusetts, Connecticut, New York, Pennsylvania, Delaware and Washington, D.C. EEN supplies about one-third of the programming used by its affiliates.

In early 1968, in addition to the Eastern Educational Network, there were five other regional ETV networks in various stages of operation: Central Educational Network, Inc., Chicago and the surrounding area; Midwest Educational Television, Inc., in Minnesota and neighboring states; Rocky Mountain Network; Southern Educational Communications Association; and Western Educational Network. Although some of the stations have microwave or off-the-air interconnection, most stations are serviced by taped program distribution.

Almost every individual State is in the planning or active stage of an interconnected network, and some 25 States have already linked stations toward eventuation of total intrastate coverage. Complete networks are in operation in such states as Alabama, Connecticut, Georgia, Maine, Nebraska, South Carolina and Vermont.

Although The Ford Foundation has made detailed proposals for a non-profit educational satellite corporation, and COSMAT has indicated its willingness to accomodate educational signals on a domestic communications satellite, no immediate plans existed in 1968 for activation of a domestic satellite for educational purposes. Global satellites have been used for some educational programs; National Educational Television initiated U. S. participation in worldwide simultaneous interchange with a program in mid-1967.

ORGANIZATIONS

The National Association of Educational Broadcasters, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036, represents radio and television stations, educational institutions and organizations, state agencies, industrial firms, state educational broadcasting associations, and individuals participating in or interested in educational broadcasting. The NAEB provides consultation, conducts research, distributes information, represents educational broadcasters to government, and publishes materials which aid in the development of educational television and radio. Its operations include: Educational Television Stations Division, National Educational Radio Division, Instructional and Professional Services Division, and an Office of Research and Development. Also associated with the NAEB is the State Educational Television Association (Council of Educational Telecommunications Authorities), made up of the chief planning officers of state educational telecommunications systems. The NAEB publishes a comprehensive "Directory and Yearbook of Educational Broadcasting."

National Educational Television, 10 Columbus Circle, New York, N.Y. 10023, as described earlier, serves virtually all the country's educational television stations

with programming. NET maintains a Washington, D.C. office at 1619 Massachusetts Avenue, N.W., 20036.

The National Citizens Committee for Public Television, 609 Fifth Avenue, New York, N.Y. 10017, seeks widespread support of PTV through public information programs, institutional advertising, and participation of national organizations in all fields. It advises state and local citizen committees, aids in the development of TV art forms, and conducts studies for permanent financing of the corporation for Public Broadcasting.

The Joint Council on Educational Telecommunications, 1126-16th Street, N.W., Washington, D.C. 20036 (formerly the Joint Council on Educational Broadcasting), is comprised of leading educational organizations. JCET acts as a channel of communication between educational interests, broadcasting, and Federal offices and Congress on national issues affecting educational telecommunications, and is concerned with cooperative inter-institutional efforts that can be facilitated by any form of electronic interconnection.

The Department of Audio-Visual Instruction (DAVI) of the National Education Association, 1201-16th Street, N.W., Washington, D.C. 20036, holds conferences, conducts research projects, publishes reports and provides consultation on educational media, including television, for its member schools and teachers on national, regional and local levels. NEA also has a Television Consultant office.

The Educational Media Council, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036, is composed of representatives of education and industry. It provides a forum on instructional problems, stimulates communications research and development, disseminates information, and conducts educational communications projects.

The Association for Professional Broadcasting Education, 1812 K Street, N.W., Washington, D.C. 20036, provides materials and guidance in educating people for careers in broadcasting.

The Southern Educational Communications Association (SECA), 928 Woodrow Street, Columbia, South Carolina 29205, provides programming and production assistance to TV and radio stations, educational institutions and industry; grant application, copyright clearance and utilization assistance; engineering consultation; and a library of aural and visual materials for its members in the southeastern states.

The Western Radio and Television Association, 1313 North Vine Street, Hollywood, California 90028, coordinates conferences, assists in utilization and distributes information concerning ETV and ITV use on the west coast.

The National Center for School and College Television, Indiana University, Bloomington, Indiana 47405, serves as a distribution and information center. Its purposes are to provide wide circulation of instructional programs, encourage

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quality production of telecourses, establish a research and dissemination service, and initiate a grant service for the production of programs.

The National Great Plains Instructional Television Library, University of Nebraska, Lincoln, Nebraska 68508, serves as a distribution center of instructional courses for all academic levels and content areas, and provides information services on utilization.

The Midwest Program for Airborne Instruction, Inc. (MPATI), Purdue University, Lafayette, Indiana 47902, in the spring of 1968 ended its seven year program of transmitting instructional programs from aircraft to schools and colleges in six midwestern states. MPATI is now serving as a source for taped instructional programs on all grade levels.

The national Committee for the Full Development of the Instructional Television Fixed Service, Federal Communications Commission, Washington, D.C. 20554, was established in late 1965 to serve as a liaison, informational and advisory group on 2500 MHz on national, regional, state and local levels. Its members represent, principally, non-profit educational institutions and organizations.

Other groups on the national level, such as the College Conference Division of the International Radio and Television Society, are involved in educational television activities. Many regional, state and local groups, such as the Southern Regional Education Board, are active in educational broadcasting matters.

GOVERNMENT AGENCIES

Special offices relating to educational broadcasting have been established on State and Federal levels.

The Educational Broadcasting Branch, Federal Communications Commission, Washington, D.C. 20554, has as its purpose the facilitation of the development of educational broadcasting, including all forms of radio and television for which the FCC is responsible. The Branch is involved in the development of rules and regulations governing educational broadcasting, is concerned with interagency educational broadcasting affairs, and provides informational, liaison and guidance services.

The Department of Health, Education, and Welfare has two offices responsible for Title I of the Public Broadcasting Act of 1967, which provides matching grants for the construction or expansion of ETV and radio broadcasting facilities. The office of the Assistant, for Educational Television, to the Assistant Secretary (Education), Department of Health, Education, and Welfare, 330 Independence Avenue, S.W., Washington, D.C. 20201, administers the program; the ETV Facilities Branch, Office of Education, 7th and D Streets, S.W., Washington, D.C. 20201, processes applications.

The Office of Education, Department of Health, Education, and Welfare, 400 Maryland Avenue, S.W., Washington, D.C. 20201, administers most of the other grants available for educational television, through several of its bureaus, including the Bureau of Research, the Bureau of Elementary and Secondary Education and the Bureau of Higher Education. See page 9 for further information on HEW grant services.

The General Services Administration, 18th and F Streets, N.W., Washington, D.C. 20405, administers the Federal Property Act, which authorizes donations of surplus property, equipment and land, which may be applied for by tax exempt radio and television stations.

Many other Federal agencies offer grants, program materials, or production contracts to educational television stations. Among the most active are the Radio and Television Office of the National Aeronautics and Space Administration; Special Projects Program, National Science Foundation; and the Radio-TV Section, Department of Agriculture. The Federal Interagency Broadcast Committee, consisting in early 1968 of 31 departments/agencies with radio-television responsibilities, does not provide grants, but is a planning and recommendation group which includes ETV as one of its concerns.

Most States have established educational broadcasting or educational television offices or commissions, principally to coordinate activities for the development of State networks. Instructional television offices are found in many Departments of Education or Departments of Public Instruction. Many county and local school systems and even individual schools have ETV coordinators for the purpose of achieving effective utilization of closed-circuit, instructional fixed and broadcast television. Many colleges and universities, public and private, have persons responsible for ETV development and use. State and local ETV councils and citizens organizations are sometimes quasi-official in that many of their members and directors are public officials.

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